

Brief Report

Exposure to Tear Gas from a Theft-Deterrent Device on a Safe — Wisconsin, December 2003

On December 4, 2003, a hazardous materials (HazMat) release occurred at a jewelry store in Beloit, Wisconsin, when the store owner tightened a screw on the door of an old safe outfitted with a chemical theft-deterrent device. The device included a metal housing containing a glass vial of liquid, which cracked as the screw tightened, releasing approximately 4 ounces of tear gas. The store owner sustained eye and skin irritation and was treated at a hospital and released. Twelve persons in the building and persons in adjacent businesses were evacuated for 3 hours while a certified Level A HazMat team*, city firefighters, and emergency medical technicians responded to the release. This report summarizes the response to this event and underscores the need for persons who use old safes and vaults to know how to identify these devices and avoid tampering with them.

Beginning in the 1920s, certain safes and vaults included (or were fitted with) theft-deterrent devices containing chemical vials (Figure). Chloropicrin[†] was used commonly in these devices. Other tear gas agents reportedly were used in similar theft-deterrent devices. The metal casing of these devices usually is approximately 3 inches wide and 6–8 inches tall; the device is fastened to the back of a safe door with screws. A major manufacturer of these devices was located in Wisconsin during the 1920s–1950s, and other companies sold similar devices. One such device was found in an Iowa bank in 1999 after a vial shattered, releasing chloropicrin and causing a pregnant bank employee to suffer eye, skin, and throat irritation (2). The number of these devices sold or still in circulation is unknown.

Chloropicrin was used as a chemical weapon during World War I (2). Documented symptoms of chloropicrin exposure include 1) irritation of the eyes, skin, and respiratory system; 2) lacrimation (i.e., tearing); 3) cough; 4) pulmonary edema; and 5) nausea and vomiting (1).

The 2003 chloropicrin release was reported to the Hazardous Substances Emergency Events Surveillance (HSEES) system operated by the Wisconsin Department of Health and Family Services. Created and funded by the Agency for Toxic

FIGURE. Chemical theft-deterrent device used on a safe



Photo/Charles Eastwood

Substances and Disease Registry (3), HSEES is a multistate[§] health department surveillance system that tracks morbidity and mortality resulting from events[¶] involving the release or potential release of a hazardous substance**. However, because reporting HazMat events to HSEES is not mandatory, participating state health departments might not be informed about every event. In addition, how many chemical releases from theft-deterrent devices occur in nonparticipating states is unknown.

Persons who use or are around older safes and vaults (e.g., bankers, jewelers, locksmiths, and vault technicians) should know how to identify these devices and should avoid tampering with them. If a device is identified, only trained persons (e.g., experienced locksmiths or HazMat personnel) should attempt to remove or neutralize these devices. In addition, appropriate personal protective equipment should be used when attempting to dismantle these devices (4). If the contents of a device are released, the area should be evacuated immediately. Persons who have adverse health effects (e.g., eye, skin, or respiratory irritation) should seek medical attention immediately.

*Equipped typically with supplied-air respirator, pressure-demand, and self-contained breathing apparatus; fully encapsulating chemical-resistant suit; coveralls; long cotton underwear; chemical-resistant gloves (inner); chemical-resistant boots with steel toe and shank; hard hat; disposable gloves and boot covers; cooling unit; and two-way radio communications.

[†]Also called nitrochloroform, nitrotrichloromethane, and trichloronitromethane. The chemical abstracts service number is 76-06-2 (1).

[§]Alabama, Colorado, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Texas, Utah, Washington, and Wisconsin.

[¶]An event is the release or threatened release of a hazardous substance(s) in an amount requiring removal, cleaning up, or neutralizing according to federal, state, or local law (3).

**A substance that can reasonably be expected to cause an adverse health effect.

Reported by: J Drew, W Otto, H Nehls-Lowe, MPH, Wisconsin Dept of Health and Family Svcs. DK Horton, MSPH, WE Kaye, PhD, Div of Health Studies, Agency for Toxic Substances and Disease Registry.

References

1. National Institute for Occupational Safety and Health (NIOSH). NIOSH Pocket Guide to Chemical Hazards. Cincinnati, Ohio: U.S. Department of Health and Human Services, CDC, National Institute for Occupational Safety and Health, 1997. Available at <http://www.cdc.gov/niosh/npg/npg.html>.
2. Cain T. Quick response eases fear of tear gas exposure. University of Iowa Hygienic Laboratory Hotline, 2000;38:2. Available at http://www.uhl.uiowa.edu/publications/hotline/2000_06/response.html.
3. Agency for Toxic Substances and Disease Registry. Hazardous Substances Emergency Events Surveillance System Biennial Report, 1999–2000. Atlanta, Georgia: U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, 2001. Available at <http://www.atsdr.cdc.gov/HS/HSEES>.
4. U.S. Department of Transportation. Emergency Response Guidebook. Available at <http://hazmat.dot.gov/guidebook.htm>.

Notice to Readers

Updated Recommendations on the Use of Pneumococcal Conjugate Vaccine: Suspension of Recommendation for Third and Fourth Dose

On March 2, this notice was posted on the MMWR website (<http://www.cdc.gov/mmwr>).

On February 13, 2004, CDC recommended that health-care providers temporarily suspend routine use of the fourth dose of 7-valent pneumococcal conjugate vaccine (PCV7) when vaccinating healthy children (1). This action was taken to conserve vaccine and minimize the likelihood of shortages until Wyeth Vaccines, the only U.S. supplier of PCV7 (marketed as Prevnar®), restores sufficient production capacity to meet the national need. Since that recommendation, PCV7 production has been much less than expected because of continuing problems with the PCV7 vial-filling production line. Shipments have been delayed, resulting in spot shortages that might continue beyond summer 2004 and become widespread. Effective immediately, to further conserve vaccine, CDC recommends that all health-care providers temporarily suspend routine administration of both the third and fourth doses to healthy children.

Approximately 1.3 million doses of PCV7 are needed each month to provide every infant in the United States with the full, 4-dose vaccination series. For January–April 2004, total shipments are estimated to be $\leq 55\%$ of the amount needed. Limiting healthy children to 2 doses of PCV7 will conserve vaccine and permit more children to receive at least 2 doses. More vaccine is expected to become available for distribution

in May and June, but availability cannot be guaranteed. CDC will continue to update health-care providers on the status of vaccine supplies while the shortage persists.

PCV7 is highly effective. The routinely recommended 4-dose series has been 97% (95% confidence interval [CI] = 76%–100%) effective against invasive disease caused by serotypes represented in the vaccine; effectiveness in children who received 3 doses before age 1 year has been 87% (95% CI = 71%–94%), and effectiveness in children who received 2 doses has been 94% (95% CI = 84%–98%) (CDC, unpublished data, 2004). Efficacy data from a randomized, controlled trial suggest that 1–2 doses of pneumococcal conjugate vaccine are protective during the 2-month interval before the next dose, with 86% effectiveness (but a 95% CI that includes zero) (2). Although limited data support a 2-dose schedule among infants, this regimen is preferable to vaccinating certain children with 3 doses and not vaccinating others. Because PCV7 is a new vaccine, no long-term data on vaccine effectiveness are available. However, the incidence of invasive pneumococcal disease declines rapidly after age 2 years, even in unvaccinated children. In 1998, before PCV7 was licensed, the incidence of invasive disease was 203 per 100,000 infants aged 1 year and 63 per 100,000 children aged 2 years (3).

To ensure that every child is protected against pneumococcal disease despite the PCV7 shortage, CDC, in consultation with the American Academy of Family Physicians, the American Academy of Pediatrics, and the Advisory Committee on Immunization Practices, recommends that all health-care providers temporarily discontinue administering the third and fourth dose of PCV7 to healthy children. Health-care providers should continue to administer the routine 4-dose series to children at increased risk for severe disease*. Unvaccinated, healthy children aged 12–23 months should receive a single dose of PCV7. For children aged ≥ 2 years, PCV7 is not recommended routinely.

This recommendation reflects CDC's assessment of the existing national PCV7 supply and will be changed if the supply changes. Updated information about the national PCV7 supply is available from CDC at <http://www.cdc.gov/nip/news/shortages/default.htm>.

*Including children with sickle cell disease and other hemoglobinopathies, anatomic asplenia, chronic diseases (e.g., chronic cardiac and pulmonary disease and diabetes), cerebrospinal fluid leak, human immunodeficiency virus infection and other immunocompromising conditions, immunosuppressive chemotherapy or long-term systemic corticosteroid use; children who have undergone solid organ transplantation, and children who either have received or will receive cochlear implants (4). All these children have been identified as being at either "high risk" or "presumed high risk" for severe invasive pneumococcal disease (5).